Scoping the future trends in natural resources availability using selected indicators as measures of progress: the links with interests and values

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Abstract

Introduction - Currently 18% of the global population consumes 80% of available natural resources. Population growth, increasing consumption, environmental degradation and climate change have increased pressure on natural resources. As they grow, economies tend to use more resources including nonrenewable stocks. The challenge facing the world is how to reconcile economic growth and development with people's well-being, sustainability and integrity of natural resources and the environment. There are processes in place geared towards the common values of a sustainable future, including the Post Rio+20 process (with Sustainable Development Goals) and a resource-efficient Europe', the flagship initiative under the Europe 2020 Strategy.

Results - This paper is the output of the research focused on the following main issues (and their linkages):

1. availability of selected resources (fossil energy resources: coal, oil and natural gas, metals and with attention to Rare Earth metals, level of biodiversity and ecosystem services, land resources),
2. trends in global natural resources use, and
3. where possible, analysis of interaction with the geopolitics.

The concept applied in this research is multidimensional, involving a landscape of actors and interests for selected critical resources. Existing / present day scientific researchers are key to predicting future trends, e.g. the prediction that coal reserves will be available up to 2112, and that coal will be the only fossil fuel remaining after 2042.

Conclusions - Sustainable natural resource systems are complex, comprising a variety of interacting players with varying knowledge, interests and values. This paper is intended to seed further thoughts on the subject. All countries should make their economies sustainable by increasing resource efficiency, reducing resource consumption in absolute terms and abandoning resource-intensive consumption patterns in favor of resource-efficient lifestyles. From the perspective of sustainability, the key issue is minimizing the environmental impact of extraction and use of raw materials (such as energy sources, construction materials, etc.). This paper provides initial mapping of group(s) of countries trying to achieve the above mentioned goals, interests and values. In this paper, we present, analyze and discuss a possible answer to the following question: "is the new 'resource curtain' in progress?".

Keywords - resource efficiency, natural resources, geopolitics, coal, oil, natural gas, metals ,Rare Earth metals, biodiversity, ecosystem services, land , sustainable development